# SRA Application Notes

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Bethesda (MD)

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This documentation provides application notes for the Sequence Read Archive (SRA) at the National Center for Biotechnology Information.

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# Active Notes

# Aspera Keys

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## Notice

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## Overview

The ascp program requires a private/public key pair for transfers. This guide describes how users can generate or convert their keys for use with ascp.

## Scope

This document is intended for users transferring large data files from NCBI. It applies to the Sequence Read Archive (SRA), dbGaP, and other archives where Aspera download is enabled.

## Generating New Keys

### ascp Version

To find the version of ascp installed, run the program with "–A" or "--version"

```
../ascp -A
```

### Versions 2.6 and newer of ascp

Linux/Unix and OS X users can use the ssh-keygen utility

Using ssh-keygen

```
ssh-keygen -f ./private.openssh
```

This will store a private key in the current working directory with the name 'private.openssh' as well as a public key with the name 'private.openssh.pub'

Using puttygen

Download the PuTTY software for UNIX

http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

For questions concerning PuTTY installation on UNIX, please see the README file provided in the downloaded source.

To generate a OpenSSH private key:

```
../puttygen -O private-openssh -t rsa -b 1024 -o private.openssh
```

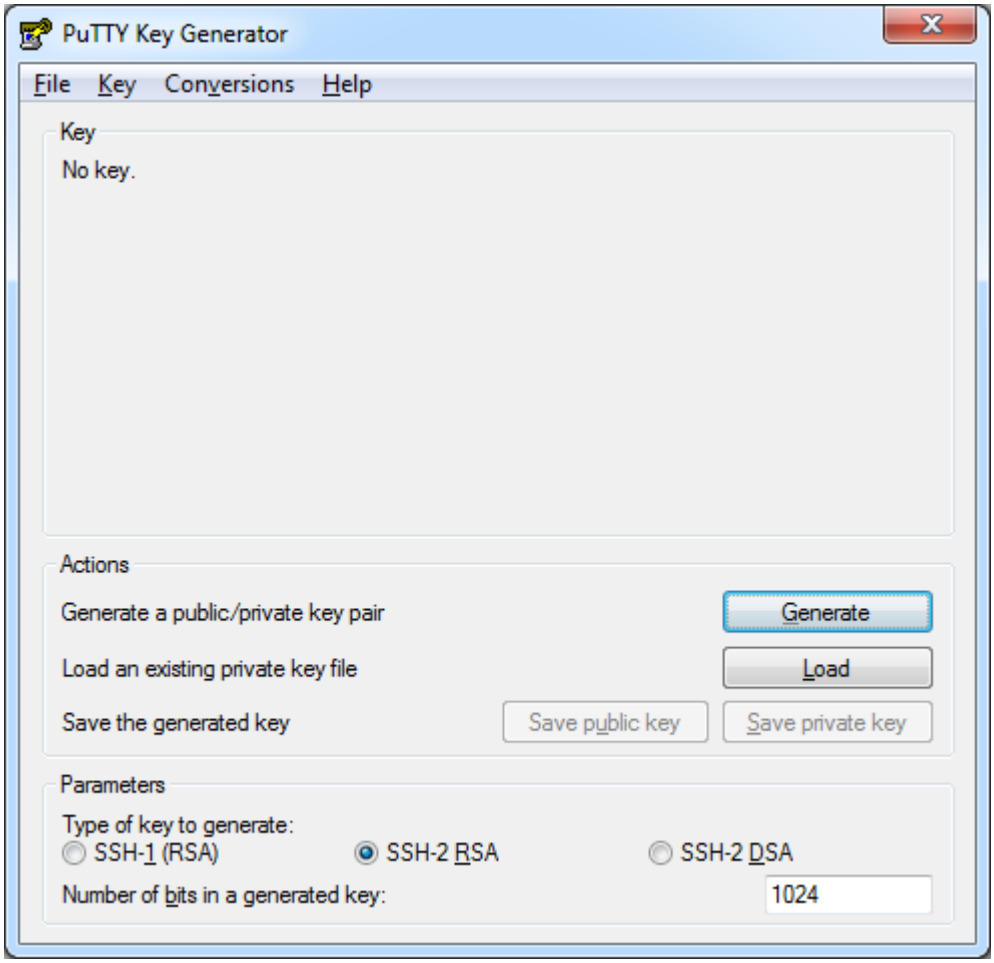
To generate an open-ssh public key from the private key:

```
../puttygen private.openssh -O public-openssh -o publicssh.pub
```

## Microsoft Windows Users:

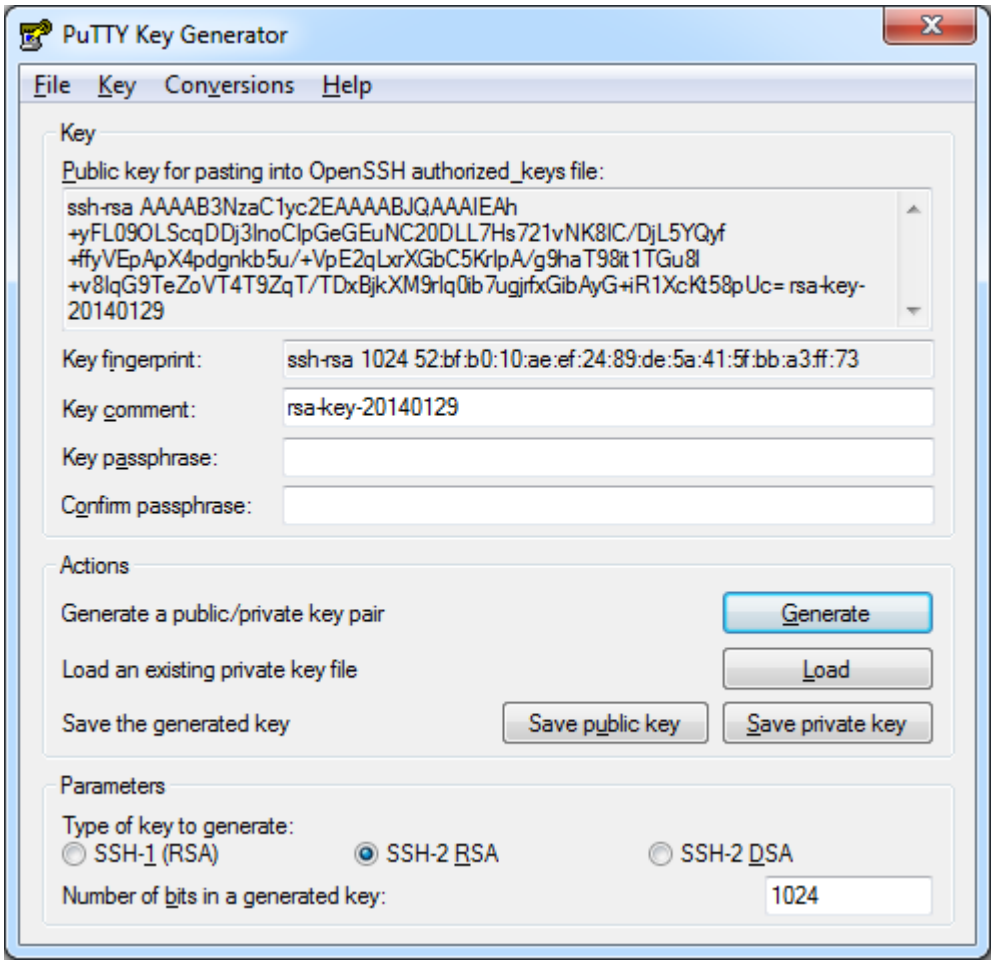
Download puttygen: http://the.earth.li/~sgtatham/putty/latest/x86/puttygen.exe

Run *puttygen.exe* to create an ssh key:



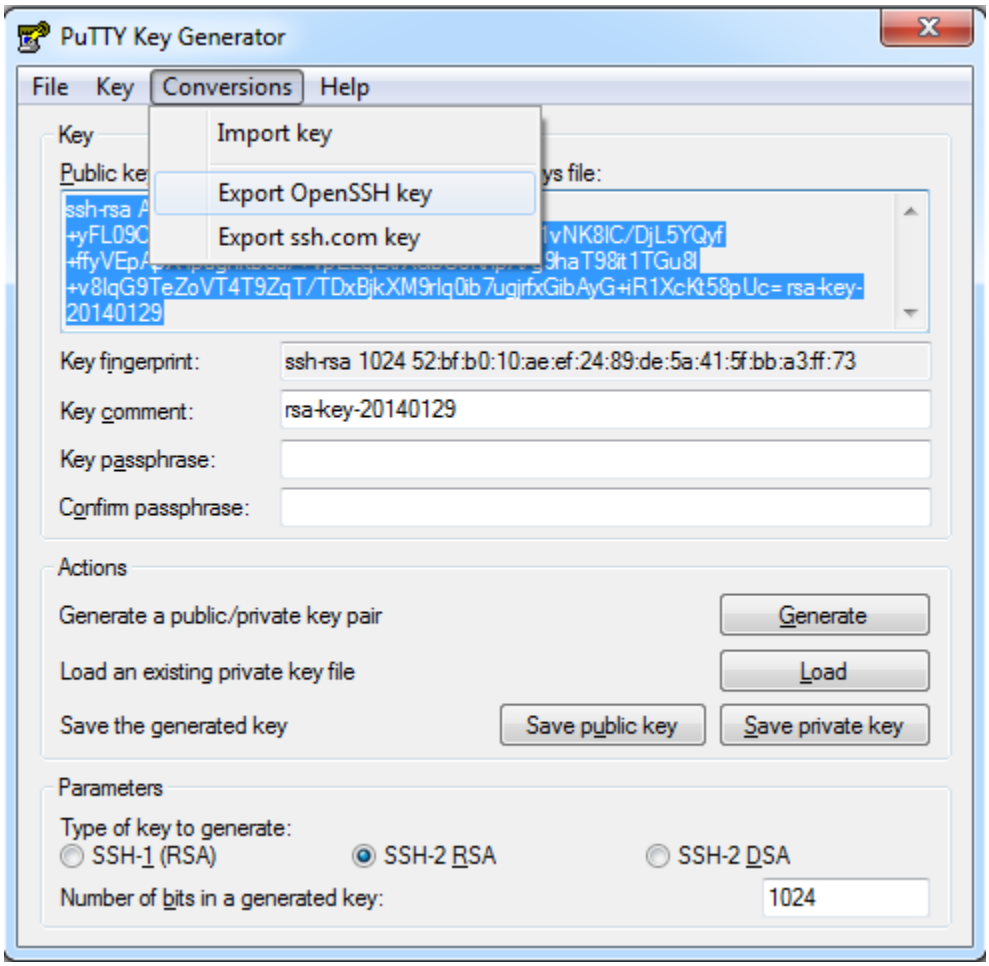

Make sure that SSH-2 RSA Parameter option is selected, and that the “Number of bits in a generated key” be set to 1024. Then press “Generate” (moving the mouse to generate a key).

Generating a key will result in something like this:




Copy the text from the “Public Key for pasting into OpenSSH authorized_keys file” text box. The OpenSSH public key must look like the following example. Other formats can’t be used as the public key.

```
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAIEAoQNz1WIxVOvdRL9fx
 … jVp9nc= rsa-key-20090113
```




Click “Export OpenSSH Key” in the “Coversions” menu to retain the private key in OpenSSH format. NOTE - leave “Key passphrase” and “Confirm passphrase” empty (otherwise, you will be prompted to enter the passphrase whenever you perform an Aspera transaction).

Keys for ascp versions prior to 2.6

## Linux/UNIX Users

Puttygen - Download the PuTTY software for UNIX

http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

For questions concerning PuTTY installation on UNIX, please see the README file provided in the downloaded source.

To generate a putty private key:

```
../puttygen -O private -t rsa -b 1024 -o puttyprivate.ppk
```

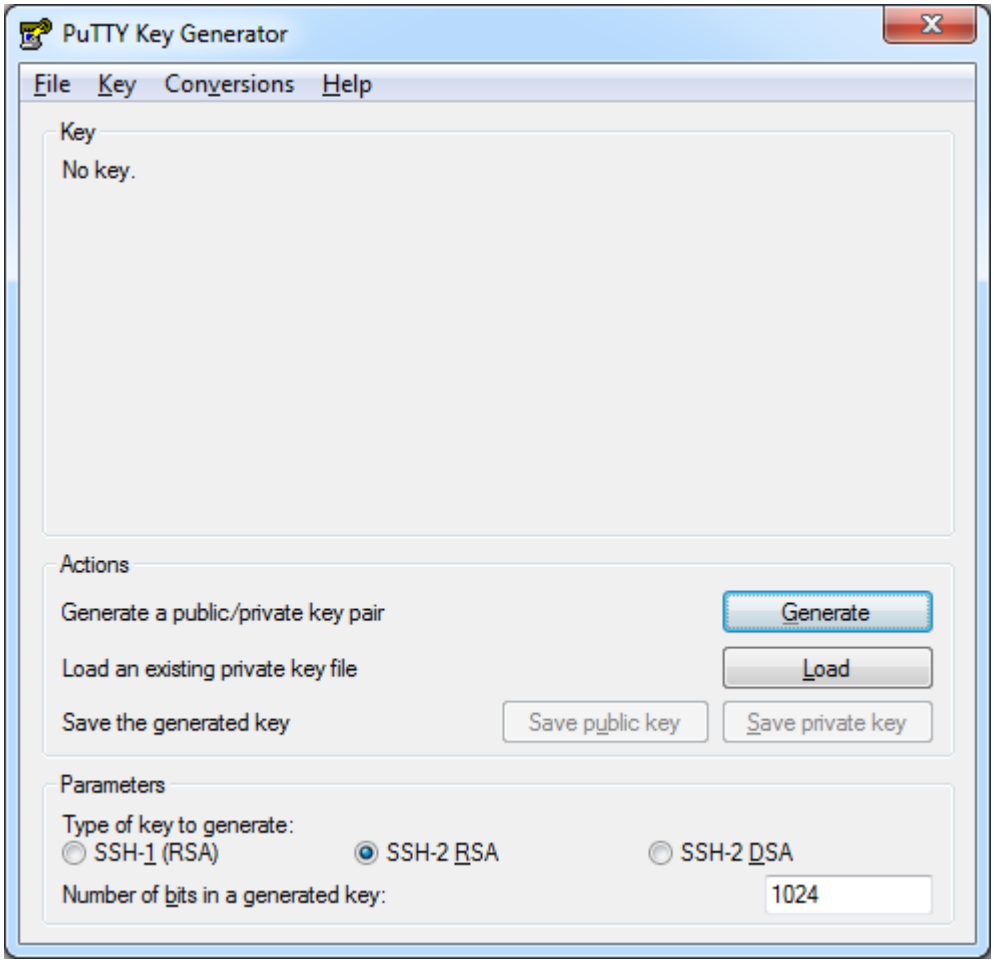
To generate an open-ssh public key from the private key:

```
../puttygen puttyprivate.ppk -O public-openssh -o publicssh.pub
```

## Microsoft Windows Users:

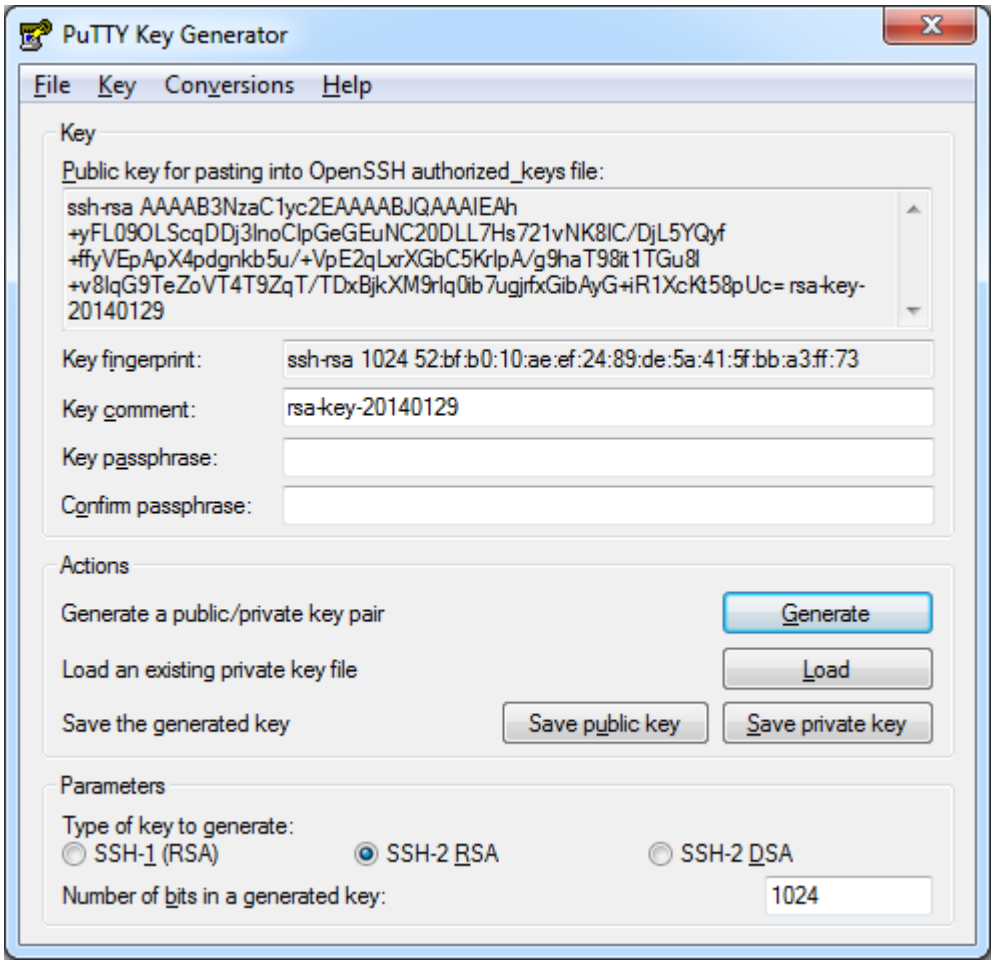
Download puttygen: http://the.earth.li/~sgtatham/putty/latest/x86/puttygen.exe

Run *puttygen.exe* to create an ssh key:




Make sure that SSH-2 RSA Parameter option is selected, and that the "Number of bits in a generated key" be set to 1024. Then press "Generate" (moving the mouse to generate a key).

Generating a key will result in something like this:




Click “Save Private Key” to retain the private key. NOTE - leave “Key passphrase” and “Confirm passphrase” empty (otherwise, you will be prompted to enter the passphrase whenever you do an Aspera transaction).

Copy the text from the “Public Key for pasting into OpenSSH authorized_keys file” text box. The OpenSSH public key must look like the following example. Other formats can’t be used as the public key.

```
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAIEAoQNz1WIxVOvdRL9fx
 … jVp9nc= rsa-key-20090113
```

# Converting Key Formats

PuTTY format keys (.ppk) will need to be converted to OpenSSH for use with the latest version of ascp.

## Linux/UNIX Users

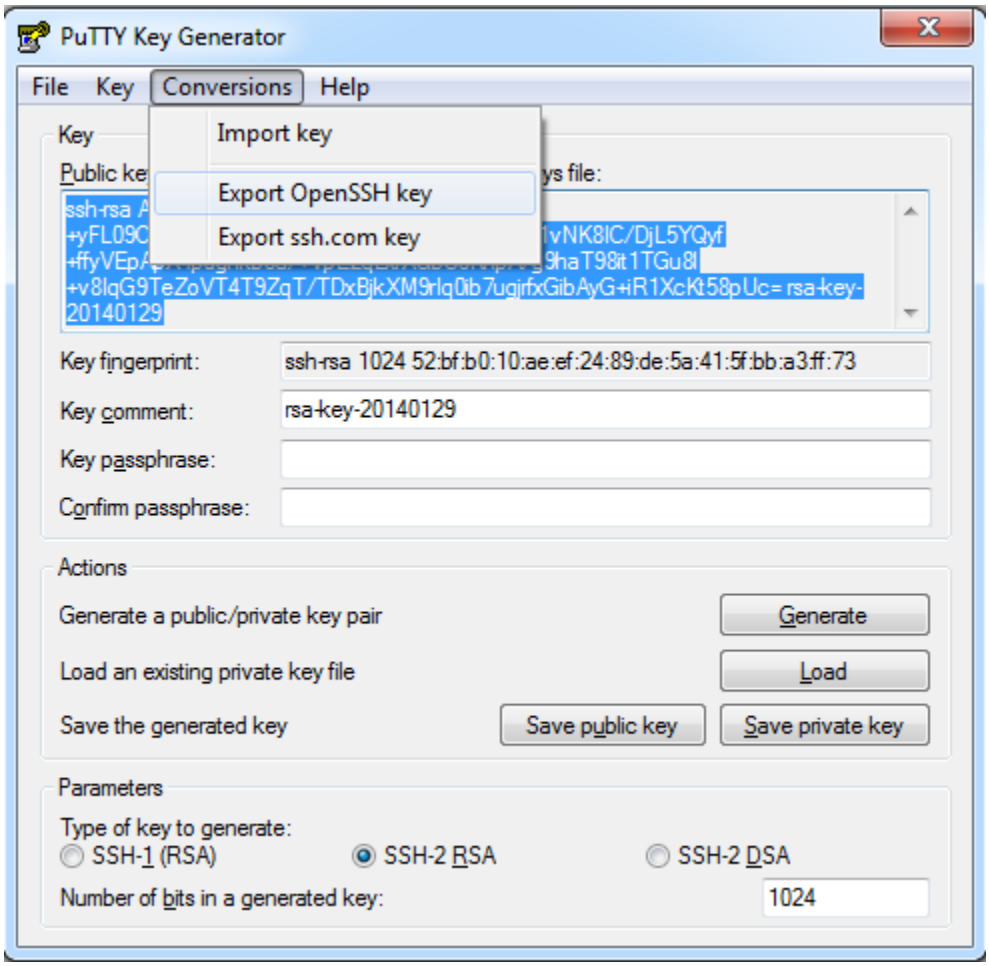
To convert a PuTTY format private key to a OpenSSH format private key with puttygen:

```
puttygen <original_key.ppk> -O private-openssh -o <new_key.openssh>
```

## Microsoft Windows Users:

Run *puttygen.exe* to convert a PuTTY format key:


In the “File” menu select “Load private key”. Select the PuTTY key the needs to be converted from the file browswer.




Select “Export OpenSSH key” from the “Conversions” menu.